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ABSTRACT

A study was conducted to explore the effect of systematically modifying story structure propositions and pronoun antecedents on monolingual, English-speaking students. The study was a replication of earlier work that had involved bilingual students. Thirty fourth-grade students were randomly assigned to one of three groups. Those in the first group read the original version of a story, those in the second group read a version that had been rewritten at the sentence level to provide explicit antecedents for 20 obscure pronouns without significantly altering the propositional density of the original, and those in the third group read a version in which trivial propositions that seemed to detract from the predictable structure had been removed. Each student read the story silently and then retold it. Following the retelling, the student was given a probed recall test designed to assess comprehension of the goal of the story as well as success in identifying obscure pronoun referents. The results showed that the students benefited from story material displaying semantic features of discourse that encourage comprehension as well as decoding ease. These features include a predictable story structure and propositions that are salient because they contribute to rather than detract from comprehension. The findings are consistent with those of the earlier study. (FL)

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SELECTED PROSE CHARACTERISTICS OF AN ESL NARRATIVE AND THEIR EFFECT ON COMPREHENSION[1]

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Selected Prose Characteristics of An ESL Narrative and Their Effect on Comprehension

Story comprehension is influenced by a complex array of psycholinguistic features. For example, readers possess a culturally determined schema for stories as problem-solving episodes that resemble real life experiences (Bower, 1978; Tannen, 1980). Numerous studies confirm that readers display a well-developed sense of story structure when they are asked to retell a narrative (Mandler and Johnson, 1977; Rumelhart, 1977; Stein and Glenn, 1979).

This internal sense of story structure is derived from countless exposures to predictable, temporally sequenced narrative categories including: 1) setting; 2) initiating event; 3) development; 4) protagonist's goal formation; 5) attempt to attain the goal; and 6) a response to the attempt. The categories vary in structural importance as evidenced in readers' recall summaries. For example, the gist or goal of a story is structurally more important than the setting (Bower, 1978), though not necessarily more memorable (Stein and Glenn, 1979). A narrative may deviate from a reader's expectations at the story structure level or at the level of individual propositions within categories. When a narrative departs from a reader's expectations at either level, processing time is increased and recall inhibited (Mandler, 1978; Stein and Nezworski, 1978; Thorndyke, 1977). Similarly, trivial propositions within a narrative

may be highly salient for some readers, thereby limiting retention of more important story features such as the gist (Bean, Potter, and Clark, 1980). This notion of propositional salience or "relevance assignment" (van Dijk, 1979, p. 113) is just beginning to receive attention in the analysis of children's story recall (cf. Stein and Glenn, 1979). It is particularly pertinent to the results of the study described in this paper.

In addition to overall story structure and propositional salience, a host of semantic features operating at the sentence and intersentential level may encourage or inhibit comprehension. For example, one semantic feature that has intrigued prose researchers in recent years is pronoun reference. Recent studies suggest that an author's use of pronouns comprises a tacit contract with the reader that assumes facility in making any bridging inferences required to identify appropriate antecedents (Nash-Webber, 1978; Warren, Nicholas, and Trabasso, 1980). Early sentence level studies concluded that pronoun ambiguity was problematic for middle grade students (Richek, 1977). However, more recent studies exploring pronoun resolution in continuous, well-formed narratives suggest that this feature of prose may be much less problematic than previously believed (Barnitz, 1980).

The majority of story structure and pronoun reference studies have involved standard English (SE) speaking subjects and story material atypical of basal reader selections. In contrast, Bean et al. (1980) explored the effect of systematically modifying story structure propositions

and pronoun antecedents on bilingual (Spanish-English) students' comprehension of a basal selection. A story entitled "The Chase Twins" from the Miami Linguistic Readers (D.C. Heath, 1966) comprised the stimulus material. Adjusting the story to make 20 of the most obscure pronoun referents explicit failed to significantly improve either students free or probed recall scores. In contrast both probed and free recall scores (Bean, Note 1) revealed that students were able to comprehend the gist or goal of the story significantly better when trivial digressions were removed, resulting in a predictable, problem-solving scenario. Moreover, students' comprehension was significantly higher on the restructured version, despite its increased decoding difficulty as measured by the Raygor (1977) readability graph. This led the authors to conclude that these students profited from story material that encouraged comprehension, not just decoding ease.

The present study is a replication of the aforementioned research with a sample of monolingual (English) children. The findings of this replication depart from the previous study yet serve to reinforce earlier conclusions with respect to the bilingual students' comprehension of the story. Present findings will be discussed in light of salience of particular propositions within story categories and free versus probed recall measures.

Method

Subjects

Thirty fourth graders attending a public elementary school in a middle-class suburb of Orange County, California were involved in the

study. All subjects were average readers based on teacher judgment and placement in stanines four, five or six of the Nelson Reading Test (Houghton Mifflin, 1977).

Materials

The opening portion of "The Chase Twins" (D.C. Heath, 1966) had been parsed into propositions and story structure categories in the previous study. This section contained the first four categories of Stein and Glenn's (1979) story grammar: 1) setting; 2) initiating event; 3) development; and 4) goal formation. The gist or goal of the story centered on twins who planned to play detective and find a stolen ruby ring. However, the predictable movement of the story was continually disrupted by the introduction of trivial propositions. For example, in the setting category, the twins argue about what to play that day -- cops and robbers or hospital. This seemingly trivial proposition formed a highly salient sub-goal for the children in the previous study. Their recall protocols indicated that the majority of their attentional resources were devoted to the least important aspects of the story in terms of its gist (Bean, Note 1).

The present study employed the three story conditions explored in the previous research. Table 1 provides an overview of the length, readability, and propositional density by category for each of the three story conditions. The readability of each story condition was determined with the Raygor (1977) graph. Thorndyke's (1977, p. 82) definition of a proposition as "a clause or sentence containing an action or stative verb" was used to guide the parsing of the story into propositions.

Insert Table 1 About Here

The original version of "The Chase Twins" comprised the first condition. The second condition was rewritten at the sentence level to provide explicit antecedents for 20 obscure pronouns without significantly altering the propositional density of the original categories. For example, the development category of the original story contained the single proposition and related pronoun "it really is a twin mystery." This was rewritten as two propositions: "the stolen ruby ring is a twin mystery." These sentence level pronoun edits resulted in a slightly longer version than the original story and increased the readability by one grade level.

The third story condition involved removing trivial propositions that seemed to detract from a predictable problem-solving structure. For example, the original story setting contained 13 propositions. These were reduced to just two introductory propositions in the rewritten version. Pronoun referents were made explicit as in the second story condition. These modifications raised the readability two grade levels beyond that of the original.

Procedure

The 30 students were randomly assigned to one of the three story conditions resulting in 10 subjects per condition. They met individually with the researchers and were instructed to read the story silently so they could retell it in their own words. Their retellings were taped

and followed by a 10 item probed recall containing wh-questions.

The probed recall was designed to assess subjects' comprehension of the gist or goal formation category (i.e. find the missing ring and solve the mystery), as well as their success in identifying obscure pronoun referents. For example, question nine, "What do the twins decide to do?" pertained to the goal formation category. Question six, "Why does Mr. Chase know so much about the robbery?" (he is one of the policemen who caught the robber) revealed the degree to which subjects were able to resolve pronoun reference. Both probed and free recalls were scored by two independent raters yielding inter-rater reliability coefficients of $r > .90$.

Subjects' free recalls were transcribed and compared to the propositional analysis for each story condition. Free recalls were scored liberally for the number of propositions produced verbatim or in paraphrase form in each story category. Free recall scores for each subject were then transformed into proportions based on a ratio of the subject's total propositional recall to his/her recall in each category. This provided an indication of propositional salience in each category and story condition. Table 2 presents the mean proportion of propositions recalled in each story condition and category.

Insert Table 2 About Here

Results

The mean probed recall scores for each of the three story conditions were: 3.47 on the original; 4.70 on the pronoun rewrite; 5.62 on the story rewrite. An analysis of variance indicated a significant difference in probed recall scores across the three story conditions (F (2,27) = 5.11, $p < .025$). Scheffe comparisons of the group means revealed a significant difference for the story rewrite condition and the original version (difference = 2.15, $p < .025$). Comparison of the pronoun rewrite condition and the original version did not reach conventional significance (difference = 1.23), although it did approach significance at .10. As in the previous study, providing explicit pronoun referents resulted in a negligible contribution to students' comprehension. While these results seemed to parallel the probed recall data from the previous study, free recall protocols provided a more detailed, and perhaps more accurate picture of this group of subjects' narrative processing, particularly in terms of story gist.

An analysis of variance comparing subjects' free recall of the goal formation category was conducted for the three story conditions. In contrast to the bilingual subjects who achieved their greatest gist recall in the story rewrite condition, there was no significant difference in recall of goal propositions for these students regardless of story condition. Table 2 confirms the relative balance of goal recall across the three conditions for these subjects. The remainder of the paper will be devoted to a discussion of these contrasting, cross-sample results with

a focus on propositional salience and the task demands of free versus probed recall.

Discussion

In the previous study (Bean et al., 1980), bilingual subjects allocated their attentional resources to the sibling argument in the setting category of the original story version (Figure 1). This salient event formed a sub-goal that detracted from their comprehension of the gist. Moreover, bilingual students' probed and free recall results (Bean, Note 1) confirmed the powerful effect of deleting trivial events on their comprehension.

While the probed recall data suggest that subjects in the present study also benefit from a predictable story structure, the free recall protocols show that these subjects deployed their attentionnal resources in a more diffuse fashion. For example, in Figure 1, it can be seen that both groups of subjects recalled a substantial number of the 13 setting propositions. In contrast, their recall of the protagonists' goal differs dramatically. In the story rewrite condition, bilingual subjects' recall of the protagonists' goal parallels that of the present subjects (Figure 2). Conversely, the original story condition containing the twins argument had a negative effect on subjects' gist recall.

Insert Figures 1 and 2 Here

The highly salient sibling argument in the setting category of the original story is consistent with van Dijk's (1979) notion of relevance assignment. He proposed that particular events in a selection may receive more processing attention, and therefore be more memorable because of various reader and text characteristics. In particular, the reader's experience and the contrasting relationship of an event to its background seem to apply to the present case. That is, "The Chase Twins" is a fairly bland selection with a strong decoding emphasis. The characters are faceless and the dialogue mundane. However, children can relate to a family argument, especially when it is played against the dull backdrop of a quiet breakfast. Based on van Dijk's (1979, p. 125 "Tentative List of Relevance Signals in Discourse" and the results of this replication, future studies should consider the relative salience of particular propositions within the analysis of childrens' protocols. In order to verify the generalizability of propositional salience, future studies ought to employ multiple narratives. For example, two prose selections containing the twins' sibling argument but different surrounding context might further reveal the psychological validity of Van Dijk's notion of relevance assignment or propositional salience.

It may well be that propositional salience will become an important consideration in the development of instructional story material for children and in devising questions to stimulate understanding of story selections.

Finally, the divergent results achieved on the free versus probed recall measures may be considered in light of their varying task demands.

The free recall measure may be an accurate reflection of the present subjects' comprehension but due to language differences, less accurate for the bilingual group. Rigg and Taylor (1979) contrasted standardized measures of comprehension with retellings. They asserted that unlike the high risk, formal wh-question task, a free recall allows the reader as narrator to establish what is crucial in the story. However, this requires language fluency and confidence gained through experience with the retelling task. Both groups of students need opportunities to practice this activity with stimulating story material that is predictable and relevant to their lives.

In summary, the present study supports the previous (Bean et al., 1980) finding that middle grade students benefit from story material displaying semantic features of discourse that encourage comprehension as well as decoding ease. These semantic features include a predictable story structure and propositions that are salient because they contribute to, rather than detract from childrens' comprehension.

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Footnote

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Table 1 Story condition, length, readability, and propositional density by category

Story Condition	# of Words	Readability	Propositions	Propositions Per Category			
				Setting	Init Event	Dev	Goal Formation
Original	583	3.0	98	13	8	56	21
Pronoun Rewrite	624	4.0	100	15	8	56	21
Story Rewrite	427	5.0	61	2	7	40	12

Table 2 Mean proportion of recall by story condition and category

Story Condition	Category			
	Setting	Initiating Event	Development	Goal Formation
Original	.46	.06	.22	.26
Pronoun Rewrite	.16	.10	.23	.38
Story Rewrite	.02	.18	.46	.31

Figure 1

Mean recall by story category and sample in the original story

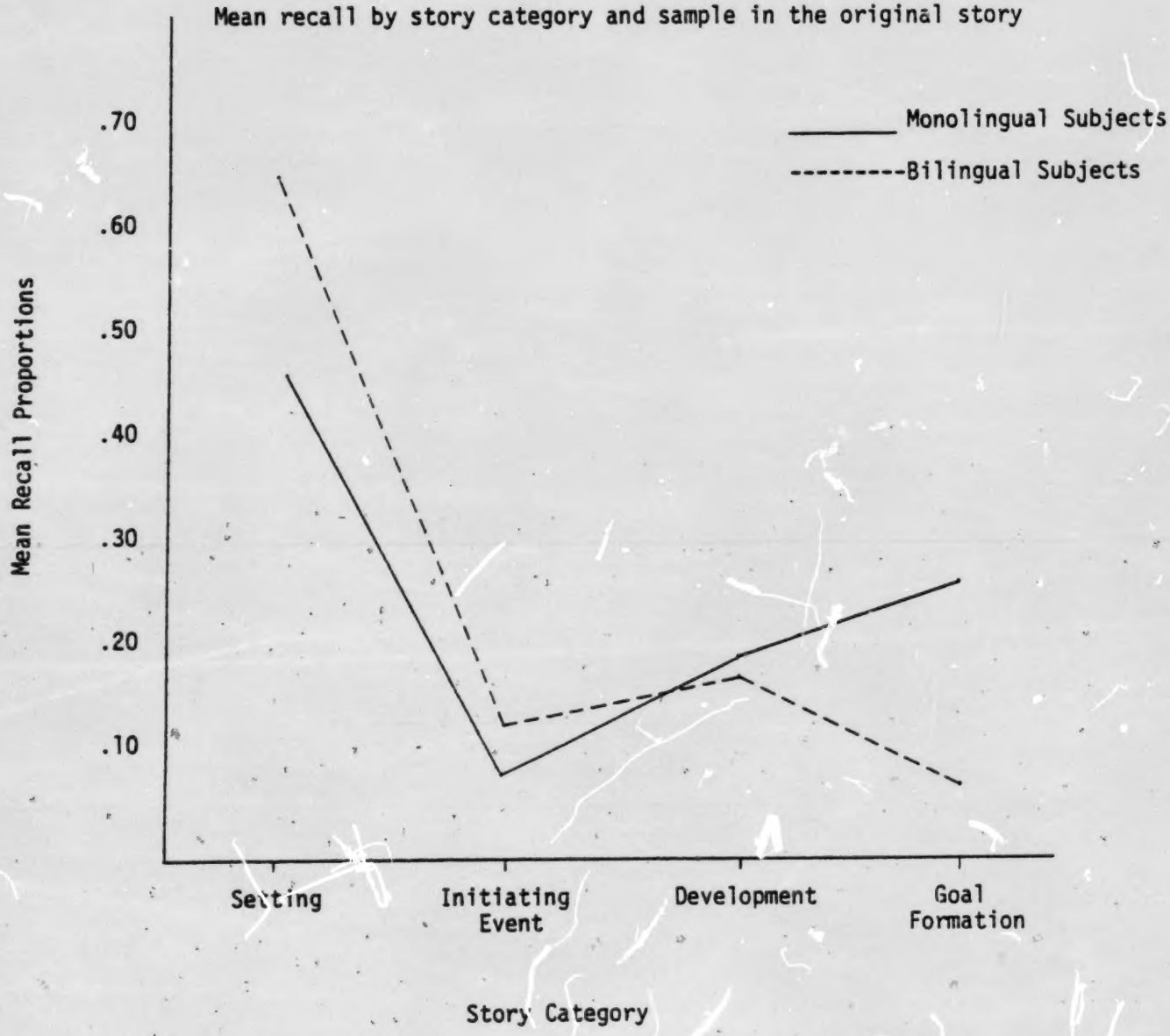

Figure 2

Mean recall by story category and sample in the story rewirte